

**PHASE CHANGE INK FORMULATION CONTAINING A COMBINATION OF A  
URETHANE RESIN, A MIXED URETHANE/UREA RESIN, A MONO-AMIDE AND  
A POLYETHYLENE WAX**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

This application is a continuation-in-part of U.S. Patent Application Serial No. 09/013,410, filed January 26, 1998, now U.S. Patent No. 5,994,453; which is a continuation-in-part of U.S. Patent Application Serial No. 08/672,815, filed June 28, 1996, now U.S. Patent No. 5,830,942. This application is also a continuation-in-part of U.S. Patent Application Serial No. 09/078,190, filed May 13, 1998, now U.S. Patent No. 6,620,228; which is a continuation-in-part of U.S. Patent Application Serial No. 08/672,816, filed June 28, 1996, now U.S. Patent No. 5,782,966.

**BACKGROUND**

**FIELD OF THE INVENTION**

The present invention relates generally to phase change inks. Still further, the present invention relates to processes of using phase change inks in printing devices. Additionally, the present invention relates to processes of using polyethylene wax as a transparent overcoat layer on a printed substrate to provide improved document feed capability from photocopiers.

**DESCRIPTION OF THE RELEVANT ART**

In general, phase change inks (sometimes referred to as "hot melt inks") are in the solid phase at ambient temperature, but exist in the liquid phase at the elevated operating temperature of an ink jet printing device. At the jet operating temperature, droplets of liquid ink are ejected from the printing device and, when the ink droplets contact the surface of the printing media, they quickly solidify to form a predetermined pattern of solidified ink drops. Phase change inks have also been investigated for use in other printing technologies such as gravure printing as referenced in U.S. Patent No. 5,496,879 and German patent publications DE 4205636AL and DE 4205713AL assigned to Siegwark Farbenfabrik Keller, Dr. Rung and Co.

Phase change inks for color printing generally comprise a phase change ink carrier composition, which is combined with a phase change ink compatible colorant. Preferably, a